

REMARKS

Claims 13 and 14 were pending in the present application, and claims 13 and 14 were rejected. Claim 13 has been amended to correct an informality, and claims 15-17 have been added. Applicant respectfully requests that the present application be considered in view of Applicant's comments below.

Rejection under 35 U.S.C. § 103

Claims 13 and 14 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,108,938 to Jones in view of U.S. Patent No. 3,976,390 to Silvern. The Patent Office has taken the position that Jones teaches a system for treating articles with compressed air comprising air knives 12, a conveyor 50, and air compressors, but that it does not describe the compressors of this system. Silvern is said to make up this deficiency by disclosing an air compression system comprising a motor 22, air compressing devices 10 and 11, an air inlet 13, an air delivery duct 21 for providing compressed air, an air recirculation loop 33, and valve 43.

Both the Jones and Silvern patents, however, explicitly teach away from the present invention. The present invention provides "a system for treating articles with heated compressed air," as stated in claim 13, in which air directed to an air drying device is compressed and thereby heated. Such heating is accomplished without needing to make use of an external heating source, by recirculating a portion of the heated, compressed air from the compressor back to the compressor inlet.

In the Silvern system, by contrast, air entering a compressor (11) is first cooled with a heat exchanger (17), so that recirculated air does not elevate the temperature of the compressed air produced by the compressor. As can be seen in Figure 1 of the Silvern patent, air from the compressing device (the "second stage" compressor 11) exits through the outflow line (21), and a portion of such air is recirculated through the recirculation loop (33). Air from the recirculation loop then passes through either loop branch 34 or 35. Air from loop branch 35 passes into a volute or exhaust passage (14), and from there *through a heat exchanger (17)* before passing back into the second stage compressor (11). Air passing through loop branch 34 first flows into another compressor (the "first stage" compressor 10), but then likewise passes through the heat

exchanger before returning to the second stage compressor (11). The system of the Silvern patent therefore does not generate heated, compressed air.

In the system of the present invention, recirculated air does not pass through equipment that results in significant cooling of the air, as in the Silvern system, but instead is passed from an air delivery duct directly back into a compressor inlet. The compressor is thereby able to produce compressed air at elevated temperatures. The Silvern patent does not teach such a system and therefore does not make obvious the present invention.

The Jones patent discourages heating compressed air, and therefore provides no further incentive to produce a system that generates heated, compressed air as presently claimed. In column 3, lines 10-21, Jones teaches that:

“Although such pre-heating [of the drying air] accelerates the evaporation of residual thin films of surface rinsing liquid on assemblies which are to-be-dried, the relative inefficiency of transferring the heat [*sic*] from said air to the entrapped water in the relatively small confined spaces prevents such pre-heating from substantially improving the overall rate of drying assemblies as desired. Furthermore, as referenced above, there are definite limits to the degree to which drying air temperature may be increased without risking damage to electronic components. Further still, there are obvious energy consumption issues surrounding such an approach as this.”

In view of the foregoing, the combination of the Silvern and Jones references does not make the system of the present invention obvious. Applicant therefore respectfully requests that the rejection under 35 U.S.C. §103 of claims 13 and 14 be withdrawn.

CONCLUSION

The Applicant believes that all pending claims, claims 13-17, are now in condition for allowance, and a Notice of Allowance is respectfully requested. If, however, there remain any issues which can be addressed by telephone, the Examiner is encouraged to contact the undersigned at the telephone number listed below.

Please charge the fee set forth in 1.17(e) for requesting continued examination, as well as any other fees associated with the filing of this document, to Deposit Account No. 19-2090.

Respectfully submitted,

SHELDON & MAK

Date: August 24, 2004
By Michael Fedrick
Michael Fedrick
Reg. No. 36,799

SHELDON & MAK
225 South Lake Avenue, 9th Floor
Pasadena, California
(626) 796-4000